U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: July 12, 2002

FROM: Michael Chrystof

TO: Craig Thomas, Ft. Dearborn RPM

SUBJECT: **US-EPA Response to USACE Response to Comments on Final QAPP for Various Site Remediations (dated June 2002) incorporating responses to US-EPA Comments on previous versions of QAPP, including October 2001 Draft Final QAPP for Various Site Remediations, Ft. Dearborn, Chicago, Ill.**

Please find attached US-EPA Response to Comments.

Attachment

US-EPA RESPONSE TO COMMENTS ON FINAL VERSIONS OF QAPP
FOR VARIOUS SITE REMEDIATIONS
FT. DEARBORN, IL

DRAFT/DRAFT FINAL FHI PROJECT QAPP COMMENTS AND RESPONSES:

11. **Section 9.2 Data Review, p. 39-41.** **USEPA Response to USACE Draft FHI QAPP Response:** Comment partially addressed. Even in the most rudimentary data reviews, at least summary tables or laboratory printouts of initial and continuing calibration data are examined to ensure that the instruments were calibrated properly in a timely manner. Although LCS, MSD, and surrogate recoveries are valuable QC tools, they do not provide very useful information to determine if instrument calibrations were done properly, done in a timely manner, and if any deviations and consequent corrective actions were noted. **USACE Response:** It has been agreed by all parties that full data validation will be conducted at the 10% level. Section 9.2 has been revised for clarity and accuracy. **USEPA Response:** Comment partially addressed. See Additional Comments Section below. **Further USEPA Response and NOTE: On 6/27/2002, corrected and expanded documentation of validation percentages and procedures submitted. US-EPA Concurs with new language and content.**

13. **Section 9.2 Data Review, p. 39-41** **USEPA Response to USACE Draft FHI QAPP Response:** US-EPA wishes to be informed when a specific validation firm is selected, and be provided with their name, address, phone and contact information (name of validator, if known). **USACE Response:** The validation firm will be Leo A. Knupple and Associates, Inc., 7770 Cooper Road, Montgomery, Ohio, 45242, tel. 513-793-4222. **USEPA Response:** Please incorporate this information into the FHI Project QAPP. **USACE Response:** Text has been added to FHI QAPP. **US-EPA Response: Concur.**

APPENDIX B: SOP COMMENTS

24. **SOP VOC - 8260B Analysis, Section 7.3.3/7.3.3.1 Soils/Subsampling.** **US-EPA Response to USACE Draft FHI QAPP Response:** See Response to Comment #7. **USACE Response:** To provide for clarity and avoid confusion, the laboratory QAPP

has been removed from the FHI Project QAPP including laboratory SOPs. Method 8260B will be used for VOC analysis in accordance with the FHI Project QAPP. Method 5035 Modified will be used for VOC sample collection and preservation, consistent with IEPA FFU Administrative Procedures. **USEPA Response:** Please be advised that laboratory SOPs are required to be included with the project QAPP. The confusion arises when two separate QAPP documents, often with conflicting QA/QC criteria, are included and referenced. Please include the ARDL Laboratory SOPs. **USACE Response:** ARDL SOPs included in Attachment A of project QAPP. **USEPA Response: Concur.**

28. **SOP TPH Analysis. US-EPA Response to USACE Draft FHI QAPP Response:** Comment partially addressed. Has a MDL/PQL for Glycol analysis been established by the laboratory? If so, can these values be provided? **USACE Response:** The MDL/MRL for glycol has been added to Section 3.6.2. **USEPA Response:** Concur. Please include glycol values in the Target Compound List Tables Section of the document for clarity. **USACE Response:** Table 3-6 includes MDL/PQL for glycol. **USEPA Response: Concur.**

30. **Table 3-1 8260B VOC TCL List Revisions. US-EPA Response to USACE Draft FHI QAPP Response:** There were extensive changes to this table without the utilization of redline/strikeout. Why are there now only approximately 33 analytes listed in the Draft Final FHI QAPP Table 3-1, when the same 8260 VOC table in the draft QAPP listed approximately 64 analytes? It appears that the ARDL QAPP Appendix D.2 VOC TAL - Contract Required Quant. Limits were substituted. This list is also considerably truncated from the analytes listed for the ARDL 8260 SOP. Why? **USACE Response:** The VOC analyte specifications in the FHI Project QAPP are the analytes to be tested for. The analytes contained in the ARDL SOP 8260B were a generic list containing all analytes that may potentially be analyzed. The CLP TCL will be analyzed for VOCs using Method 8260B. Table 3-1 has been revised accordingly. **USEPA Response:** Comment not addressed. US-EPA wishes clarification as to why the list of analytes has been reduced to this level. US-EPA did not specify, nor request that the SW-846 8260B list be replaced with the much truncated CLP listing. Please utilize the 8260B listing of compounds. **USACE Response:** List of VOCs has been agreed to via negotiations with US-EPA/IDEM. **USEPA Response: Concur.**

31. **Table 3-2 8270C SVOC MDL/PQL Revisions. US-EPA Response to USACE Draft FHI QAPP Response:** There were changes to the MDL/PQL values this table without the utilization of redline/strikeout. 8 compounds had their low soil Quant. Limits raised to 830 ug/Kg. Please elaborate. **USACE Response:** The low soil quantitation limits were revised according to the reporting limits provided by the laboratory. The CLP TCL will be analyzed for SVOCs using Method 8270C. **USEPA Response:** US-EPA wishes clarification as to why the list of analytes has been changed. US-EPA did not specify, nor request that the SW-846 8270C list be replaced

with the CLP listing. Please utilize the 8270C listing of compounds. **USEPA Response: See latest Responses to Comment #30 as it applies here as well for SVOC list.**

ADDITIONAL COMMENTS SECTION:
COMMENTS ADDRESSING CHANGES INCORPORATED INTO OCTOBER 2001 DRAFT FINAL FHI QAPP.

GENERAL COMMENT: It is recommended that a column be added to the Target Analyte Tables (Tables 3-1 through 3-5) listing the Region IX PRGs (for soil) next to each analyte. It will be of assistance to any present or future document user to have the PRGs in these tables, readily available to show that the project DQOs can be achieved by the recommended analytical methods. **USACE Response:** List of Region IX PRGs has been added to Tables 3-1 through 3-5.. **USEPA Response: Concur.**

COMMENTS : OCTOBER 2001 DRAFT FINAL FHI QAPP.

1. **Section 4.0 Sampling Procedures, p.22 USEPA Comment:** It is recommended that the text in the first paragraph be modified to state precisely which FSP is being referenced, by version number, date, etc. This is so that in the future, should there be modifications to the FSP, there will be no misunderstanding as to which version is being referenced. **USACE Response:** Text has been added to specify version and data of current FSP (Dec. 2001 version).. **USEPA Response: Concur.**

2. **Section 6.2.5 Manual Integration, p.34-36. USEPA Comment:** This guidance is incorporated only in the GC Methods Section, not GC/MS. It should be applicable to both method types, and it would be preferable to modify the text to reflect which methodologies this guidance will apply to for clarity. **USACE Response:** Text has been added to specify applicability for both GC and GC/MS.. **USEPA Response: Concur.**

3. **Section 6.2.5 Manual Integrations, p.35. USEPA Comment:** Text states that "if required by the customer, a third party data validation performed by others of the sample results obtained by manual integration is completed". US-EPA wishes to re-state that a third party data validation is required for all manually-integrated sample results. It is also unclear in Section 6.2.5 as to what ARDL's policy is on the use of manual integration for initial/continuing calibration or the generation of other critical QC data, and what is not acceptable in these circumstances. Please refer to already provided US-EPA Region V Policy on Manual Integration. **USACE Response:** Text has been added to specify requested policy and procedures on manual integration, and data validation related to manual integration. All manually integrated data will be validated. Bullet added to Section 9.2 to indicate that manually integrated peaks will be validated and identified in case narrative. ARDL to utilized USEPA Region V Manual

Integration Policy. Section 6.2.5 modified to refer to this policy, and it is listed as a reference as well. **USEPA Response: Concur.**

4. **Table 8-1 (8260B) MS/Acceptance Criteria. USEPA Comment:** There is a caveat that states "Only if [spike] > 1/4 [sample]." What does this mean? Concentrations? **USACE Response:** Text has been added to clarify that this is the "4x rule" for spike concentrations, as that the sample concentration does not exceed 4x the spike, else the spike will not be readily discernable.. **USEPA Response: Concur.**

5. **Table 8-1 (8260B) Surrogate/Corrective Action. USEPA Comment:** Text only states "Rerun sample". What if the recovery is < 10%? When do you re-extract/rerun? **USACE Response:** Text has been added to clarify that if surrogate is out of control, sample will be rerun with new sample fraction, and Table 8-1 was modified to indicate this. **USEPA Response: Concur.**

6. **Table 8-1 (8260B) MS/MSD/Surrogate Lab Flagging Criteria. USEPA Comment:** There is text that states "sample data IAW with lab protocol". Does IAW mean "in accordance with"? **USACE Response:** Yes, and IAW definition was added to acronym list. **USEPA Response: Concur.**

7. **Table 8-2 (8270C) Initial Calibration/Frequency. USEPA Comment:** Frequency is stated "as required", and is non-specific. A much better definition was provided in Method 8260B for Frequency, (ie. "prior to analysis and when continuing calibration fails criteria"). **USACE Response:** Table 8-2 has been changed to utilize the suggested text verbatim. **USEPA Response: Concur.**

8. **Table 8-2 (8270C) Initial Calibration Verification/Corrective Action. USEPA Comment:** Corrective Action is stated "Correct problem and repeat", and is non-specific. A much better definition was provided in Method 8260B for Corrective Action, (ie. "Correct problem and repeat (rerun). If still out of control, recalibrate instrument"). **USACE Response:** Table 8-2 has been changed to "Correct problem and recalibrate instrument". **USEPA Response: Concur.**

9. **Table 8-2 (8270C) MS/Acceptance Criteria. USEPA Comment:** Please see Comment #4 on spike/sample definitions. **USEPA Response: See Comment #4 latest USACE/USEPA responses as they apply here as well.**

10. **Table 8-2 (8270C) Surrogate/Corrective Action. USEPA Comment:** Text is somewhat unclear, as it states "rerun samples and/or extract when two surrogates are out or < 10%." Please specify as to what "out" is; how far out of spec. for surrogates to trigger a rerun or extraction. If a surrogate is < 10% recovery, is the sample re-extracted? **USACE Response:** Table 8-2 has been changed to re-run samples if two surrogates are out of spec, or if any one surrogate is < 10%. If after rerun, surrogates

are still out of spec, sample will be re-extracted/re-run. **USEPA Response: Concur.**

11. **Table 8-2A (8270C - SIM) Flagging Criteria. USEPA Comment:** This table is vague and limited in detail. Is it laboratory flagging criteria? If so, the flagging criteria definitions are vague and even contradictory. For Initial Calibration, it states "R" flag if the calibration fails, or if < .995 then J/UJ/R, then "No flagging". For CCV, it gives vague references to "marginally out", or "marginally less". For Target Analyte Confirmation, it states "No flags". What purpose does this table serve? There needs to be a complete MQO table established for Method 8270C-SIM, as this method is being utilized in place of SW-846 8310 for PNAs, and the QA/QC requirements must be clear. Also, a separate 8270C-SIM Summary of Data Validation Qualifiers Table needs to be established in Section 9.0 (Data Validation Tables). **USACE Response:** Acceptance Criteria for 8270C-SIM is the same as for 8270C, therefore Table 8-2A has been removed. Table 8-2 criteria will be utilized for both. Also, Validation Criteria for both methods are the same, so Table 9-3 will be used, and PAHs are added to Table 9-3 as well. **USEPA Response: Concur.**

12. **Table 8-3 (8082) PCBs/ MB Acceptance Criteria. USEPA Comment:** Text states that "up to 5% may exceed". Exceed by how much? What is deemed acceptable? **USACE Response:** As per SW-846 method and ARDL SOP, text in Table 8-3 now reads "Analytes <MDL or <5% of the regulatory limit, or <5% of the highest sample concentration. **USEPA Response: Concur.**

13. **Table 8-3 (8082) PCBs/MS Acceptance Criteria. USEPA Comment:** Please see Comment #4 on spike/sample definitions. **USEPA Response: See Comment #4 latest USACE/USEPA responses as they apply here as well for Table 8-3.**

14. **Table 8-3 (8082) PCBs/Surrogates Acceptance Criteria. USEPA Comment:** Text states to use "professional judgement regarding additional corrective action requirements". If surrogates are repeated and still fail, corrective actions must be defined as to when they will be triggered, and what will be done. **USACE Response:** Text has been changed to read "Rerun sample. **USEPA Response: Concur.**

15. **Table 8-3 (8082) PCBs/Target Analyte Confirmation. USEPA Comment:** Text in this subsection merely says "whenever a positive is detected in one column" and "N/A". This is not sufficient. An RPD cannot be determined w/o two column comparisons.. Also, what is the consequences if the RPD is >40%? When is data deemed to be unacceptable? **USACE Response:** Text in Table 8-3 has been changed to read "within RT window for second column". Results outside RT window in second column not confirmed and considered to be non-detected. **USEPA Response: Concur.**

16. **Table 8-4 (8015B) Glycol/MB Acceptance Criteria. USEPA Comment:** Text states that "up to 5% may exceed". 5% of what, as this test is only for Ethylene Glycol?

Exceed by how much? **USACE Response:** Text in Table 8-4 has been changed to read that the MB must not exceed the MDL. **USEPA Response: Concur.**

17. **Table 8-4 (8015B) Glycol/MS Acceptance Criteria. USEPA Comment:** Please see Comment #4 on spike/sample definitions. **Note: See Comment #4 latest USACE/USEPA responses as they apply here as well for Table 8-4.**

18. **Table 8-4 (8015B) Glycol/Target Analyte Confirmation/Acceptance Criteria. USEPA Comment:** Text in this subsection says "Confirm by fortification". Please add or reference some specifics to this Acceptance Criteria, as to what is acceptable performance, and what corrective action will be done if this test fails criteria. **USACE Response:** If peak for glycol is detected, sample is spiked with known concentration of glycol and rerun to confirm. If multiple peaks seen, glycol detect is not confirmed, and is considered a nondetect. **USEPA Response: Concur.**

19. **Table 8-5 (6010-ICP) Initial Calibration/Acceptance Criteria. USEPA Comment:** Text states "N/A". There is no acceptance criteria for initial calibration? Corrective actions then state "correct problem and repeat"? Please elaborate. **USACE Response:** Method 6010B does not specify just IC standards criteria, but uses a combination calibration verification samples, LCS, and the calibration blanks as well. If the ICV fails, the instrument must be recalibrated. **USEPA Response: Concur with response. However, Corrective Action column in this table still reads "correct problem and repeat". There is no mention of any recalibration.**

20. **Table 8-5 (6010-ICP) Initial Calibration Blank/Acceptance Criteria. USEPA Comment:** Text states "up to 5% may exceed". Exceed how much? **USACE Response:** As per method requirements, text in Table 8-5 has been changed to read that the ICB/CCB must not exceed the MDL. **USEPA Response: Concur.**

21. **Table 8-5 (6010-ICP) Method Blank/Acceptance Criteria. USEPA Comment:** Text states "analytes <MRL or <5% of least concentrated associated sample". Later data validation tables (Section 9.0, Table 9-6) don't mention this caveat for ICP Method Blanks. Please explain. **USACE Response:** As per method requirements and flagging via the NFG, contamination of method blank sample either must not exceed the MDL, or be greater than 5% of the regulatory limit, or greater than 5% of the least concentrated sample, and if MB contamination is >20% of sample concentration, it is considered to be a "U", nondetect. **USEPA Response: Concur.**

22. **Table 8-6 (7470-Hg) Initial Calibration Blank - Method Blank/Acceptance Criteria. USEPA Comment:** For ICB, text states "up to 5% may exceed; this analysis is only for one analyte, Mercury. For MB, Please see previous Comment #21 on Method Blank (compared to Section 9.0, Table 9-7). **USEPA Response: See responses to Comment #21 (Method Blank) as they apply here as well.**

23. **Section 9.2 Data Review, p.58. USEPA Comment:** There is still some differences in this version of the document that need attention. The laboratory should do it's normal internal QC and completeness checks on 100% of the data, and should submit the entire data packages, including raw data, to the main/prime contractor. Harza, being the main contractor, needs to do a 100% data review (not full data validation). A 100% data review is more than just a "completeness check", but examines all the laboratory deliverables, compares the data received with QC criteria for all the Quality Control Elements (including calibration), Acceptance Criteria, Corrective Action Reports, etc. This ensures that QC criteria, data quality, and project DQOs are met. It is vital that Harza do this for 100% of the data. If there is any problems with the data, it is much more cost effective to find, and to rectify the problems as soon as possible to avoid having to reject large amounts of data later and have to resolve data gaps by re-mobilization and re-sampling efforts.

Please note that the data review/verification process does not necessarily entail the recalculation and reconstruction (from laboratory raw data) of sample and QC results; that is done in a full data validation. This reconstruction of the data is the 10% full data validation, in which data is selected from all methods, and all matrices so to be as representative as possible. If a systemic/method/matrix problem(s) is found to exist, then the 10% validation should be increased as described in Section 9.2, up to 100% of the affected method/matrix data if necessary. The full data validation is normally done by an independent, third party. Harza may certainly also do a 10% full data validation internally as well if so desired. The independent, third-party, full data validation gives an independent opinion on overall data quality, and can be used as a powerful tool to provide an unbiased defense of project data quality, and subsequently, the decisions based upon that data. **USEPA Response: New language was submitted 06/27/2002 to describe the data validation process, and it incorporates the suggested methods and procedures above. USEPA requests the new language be incorporated into the QAPP, and concurs.**

24. **Table 9-2 (VOC) Summary of Data Validation Quality Objectives/Initial and Continuing Calibration, Criteria and Qualifiers. USEPA Comment:** For both initial and continuing calibration, the minimum RF value is $\geq$.05, and only if there are "gross exceedences" are non-detects flagged "R", rejected. The quality measurement does not agree with the acceptance criteria set in Method Quality Objective Table 8-1 for VOCs. Some compounds will pass QC criteria in one table, and fail in another. Also, what is deemed a "gross exceedence?". What value will set the limits of acceptability? **USACE Response:** NFG will be used for data qualification, and it states "professional judgement" must be used and documented. NFG does not set the qualification criteria. **USEPA Response: The NFG is a useful guidance document, but which was originally written to validate CLP lab protocols, and the acceptance criteria for SW-846 methods often differ from the NFG. "Professional Judgement" only, with no agreed upon set criteria, can lead to disagreements as to**

whether data is really acceptable, or not. Professional judgement is not a catch-all to cover any circumstances where the NFG does not specify, or is silent on SW-846 specific criteria.

25. **Table 9-2 (VOC) Summary of Data Validation Quality Objectives/Method Blank, Flagging Criteria. USEPA Comment:** Text states to qualify samples (< 5x of blank concentration, and < 10x for "common". Please specify the list of common compounds that this will apply to for this project. Also, the normal flagging for positive hits to qualify for method blank is "U", not UJ. **USACE Response:** Common contaminants are acetone, methylene chloride and 2-butanone. Flagging in Table 9-2 changed to be a "U" **USEPA Response: Concur.**

26. **Table 9-2 (VOC) Summary of Data Validation Quality Objectives/System Monitoring Compounds, Flagging Criteria. USEPA Comment:** There is text in several rows that state "RECs > UL", etc. Does RECs stand for recoveries? Also, the flagging requirements state that if REC is < 10%, flagging is J/R, detects/non-detects. Is there any LL (other than 0), where recovery is so poor that the data should be flagged R/R detects/non-detects? **USACE Response:** REC means recoveries. Flagging will be same as NFG states for this criteria. **USEPA Response: Understood.**

27. **Table 9-2 (VOC) Summary of Data Validation Quality Objectives/Internal Standards, Flagging Criteria. USEPA Comment:** There is an entry that states "Area < <-50%". What does the " < < " stand for? What values? **USACE Response:** " < < " means much less than, and NFG states "extremely low area counts", but does not specify a limit. Professional judgement will be used. **USEPA Response: The NFG is a useful guidance document, but which was originally written to validate CLP lab protocols, and the acceptance criteria for SW-846 methods often differ from the NFG. "Professional Judgement" only, with no agreed upon set criteria, can lead to disagreements as to whether data is really acceptable, or not. Professional judgement is not a catch-all to cover any circumstances where the NFG does not specify, or is silent on SW-846 specific criteria.**

28. **Table 9-3 (SVOC) Summary of Data Validation Quality Objectives/Initial and Continuing Calibration, Criteria and Qualifiers. USEPA Comment:** For both initial and continuing calibration, the minimum RF value is ≥.05, and only if there are "gross exceedences" are non-detects flagged "R", rejected. The quality measurement is different from acceptance criteria set in Method Quality Objective Table 8-2 for SVOCs. Which takes precedence? Also, what is deemed a "gross exceedence?". What value will set the limits of acceptability? **US-EPA Response: See previous comments on acceptance criteria and "professional judgement".**

29. **Table 9-3 (SVOC) Summary of Data Validation Quality Objectives/Method Blank,**

Flagging Criteria. USEPA Comment: Text states to qualify samples (<5x of blank concentration, and <10x for "common". Please specify the list of common compounds that this will apply to for this project. Also, the normal flagging for positive hits to qualify for method blank is "U", not UJ. **USACE Response:** Common contaminants are "common pthalate contaminants". Flagging in Table 9-2 changed to be a "U" **USEPA Response: Concur.**

30. **Table 9-3 (SVOC) Summary of Data Validation Quality Objectives/Surrogate Spikes, Flagging Criteria. USEPA Comment:** The flagging requirements state that if REC is <10%, flagging is J/R, detects/non-detects. Is there any LL (other than 0), where recovery is so poor that the data should be flagged R/R detects/non-detects? **USEPA Response: USACE Response:** REC means recoveries. Flagging will be same as NFG states for this criteria. **USEPA Response: Understood.**

31. **Table 9-3 (SVOC) Summary of Data Validation Quality Objectives/Internal Standards, Flagging Criteria. USEPA Comment:** There is an entry that states "Area <<-50%". What does the "<<" stand for? What values? **USEPA Response: See Comment #27 as responses apply here as well.**

32. **Table 9-4 (PCBs) Summary of Data Validation Quality Objectives/Initial Calibration, Criteria and Flagging Qualifiers. USEPA Comment:** For initial calibration, Data Review and Flagging Criteria states "Qualify sample results not within criteria" as J/UJ. How far can initial calibration be out of spec before either the instrument is recalibrated and/or data is questionable to point that it must be flagged "R", rejected? **USACE Response:** If initial calibration is out of control, data will be rejected. Flagging in Table 9-4 changed to "R/R" **USEPA Response: Concur.**

33. **Table 9-4 (PCBs) Summary of Data Validation Quality Objectives/Calibration Verification, Criteria and Flagging Qualifiers. USEPA Comment:** For calibration verification, Data Review and Flagging Criteria does not appear correct. Acceptance Criteria states that a %D should be $\leq$15%, or mean D $\leq$15%, yet the Data Review/Flagging Criteria state REC >130%, and "marginally out use professional judgement", and REC>70%. Please explain. **USACE Response:** Proper %D specs of +/-25% were added, as well as RT window specs. If RT window is out of control, data will be rejected. Flagging in Table 9-4 changed to "R/R" **USEPA Response: Concur.**

34. **Table 9-4 (PCBs) Summary of Data Validation Quality Objectives/Method Blank, Flagging Criteria. USEPA Comment:** Please note the normal flagging for positive hits to qualify for method blank is "U", not UJ. **USACE Response:** Flagging in Table 9-4 changed to be a "U" **USEPA Response: Concur.**

35. **Table 9-4 (PCBs) Summary of Data Validation Quality Objectives/Surrogate**

Spikes, Flagging Qualifiers. USEPA Comment: The flagging requirements state that if REC is $<10\%$, flagging is J/R, detects/non-detects. Is there any LL (other than 0), where recovery is so poor that the data should be flagged R/R detects/non-detects? **USACE Response:** Flagging is consistent with NFG for this criteria. **USEPA Response: Understood.**

36. **Table 9-4 (PCBs) Summary of Data Validation Quality Objectives/Target Analysis Confirmation. USEPA Comment:** Text in this subsection merely says "whenever a positive is detected in one column" and "results exceeding". This is not sufficient. An RPD cannot be determined w/o two column comparisons.. Also, what is the consequences if the RPD is $>40\%$? When is data deemed unacceptable? **USEPA Response: Comment addressed. Understood.**

37. **Table 9-5 (Glycol) Summary of Data Validation Quality Objectives/Initial Calibration and ICV, Criteria and Flagging Qualifiers. USEPA Comment:** For initial calibration and ICV, Data Review and Flagging Criteria states "Qualify sample results not withing criteria" as J/UJ. How far can initial calibration/ICV be out of spec before either the instrument is recalibrated and/or data is questionable to point that it must be rejected? **USACE Response:** If initial calibration is out of control, data will be rejected. Flagging in Table 9-5 changed to "R/R" **USEPA Response: Concur.**

38. **Table 9-5 (Glycol) Summary of Data Validation Quality Objectives/CCV, Criteria and Flagging Qualifiers. USEPA Comment:** For CCV, Data Review and Flagging Criteria does not appear correct. Acceptance Criteria states that a %D should be $\leq 15\%$, or mean D $\leq 15\%$, yet the Data Review/flagging criteria state REC $>130\%$, and "marginally out use professional judgement", and REC $>70\%$. Please explain. **USACE Response:** Proper CCV criteria of +/-15% were added. **USEPA Response: Concur.**

39. **Table 9-5 (Glycol) Summary of Data Validation Quality Objectives/MB, Acceptance Criteria. USEPA Comment:** Text states that "up to 5% may exceed". 5% of what, as this test is only for Ethylene Glycol? Exceed by how much? **USACE Response:** SOP for Glycol states that MB must not exceed the MDL., and table has been modified accordingly. **USEPA Response: Concur.**

40. **Table 9-5 (Glycol) Summary of Data Validation Quality Objectives/Target Analysis Confirmation. USEPA Comment:** Text in this subsection merely says "whenever a positive is detected in one column" and "results exceeding". This is not sufficient. An RPD cannot be determined w/o two column comparisons.. Also, what is the consequences if the RPD is $>40\%$? When is data deemed unacceptable? **USEPA Response: Comment addressed. Understood.**

41. **Table 9-6 (ICP Metals) Summary of Data Validation Quality Objectives/**

ICV/CCV, Flagging Criteria. USEPA Comment: The ranges listed here are wider than what is allowable in previous Table 8-5 (Acceptance Criteria 90-110). It would be understandable for max range limits to be, for example, 85-115. But 75-125 is quite wide, and is the range normally seen for Matrix Spike. Please elaborate. **USEPA Response: USACE provided ranges and flagging criteria. Understood. However, flagging criteria and qualifiers columns need to be updated, as there seems to be a mismatch between columns, and no qualifier if REC <75%.**

42. **Table 9-6 (ICP Metals) Summary of Data Validation Quality Objectives/ ICB/CCB/MB, Flagging Criteria. USEPA Comment:** Please note the normal flagging for positive hits to qualify for blank contamination is "U", not UJ. **USACE Response:** Flagging in Table 9-4 changed to be a "U" **USEPA Response: Concur.**

43. **Table 9-6 (ICP Metals) Summary of Data Validation Quality Objectives/ LCS (soil), Flagging Criteria. USEPA Comment:** The range listed here for soil is REC <50%, flagging J/UJ. Is there any recovery level less than 50% for soil that would be considered unacceptable, such that data would be qualified R? **USACE Response:** There is no instance where recovery for soils, no matter how low, would be considered unacceptable or data rejected. Data will be qualified as per the NFG. **USEPA Response: Be advised that if recoveries are grossly low/out of spec, there may be questions on the quality of the data from US-EPA.**

44. **Table 9-6 (ICP Metals) Summary of Data Validation Quality Objectives/ Matrix Spike, Flagging Criteria. USEPA Comment:** In the flagging criteria, for detects there is no flagging at all (not even "J") regardless of how low the recovery is. Why? A low MS recovery may effect the reliability of data for both detects and non-detects. **USACE Response:** Flagging in Table 9-6 added to be a "J" if MS recoveries are <75%. **USEPA Response: Concur.**

45. **Table 9-7 (Mercury) Summary of Data Validation Quality Objectives/ICV/CCV, Flagging Criteria. USEPA Comment:** The ranges listed here are wider than what is allowable in previous Table 8-6 for Hg (Table 8-6 ICV Acceptance Criteria 90-110, Table 8-6 CCV Acceptance Criteria 80-120). It would be understandable for max range limits to be, for example, +/-5% more than stated. But 75-125 (ICV), and 65-135 (CCV) is quite wide. Please elaborate. **USEPA Response: USEPA Response: USACE provided ranges and flagging criteria. Understood.**

46. **Table 9-7 (Mercury) Summary of Data Validation Quality Objectives/LCS, Flagging Criteria. USEPA Comment:** The range listed here for soil is REC <50%, flagging J/UJ. Is there any recovery level less than 50% for soil that would be considered unacceptable, such that data would be qualified R? **USEPA Response: See Responses to Comment #43 as they apply here as well.**

47. **Table 9-7 (Mercury) Summary of Data Validation Quality Objectives/ Matrix Spike, Flagging Criteria. USEPA Comment:** In the flagging criteria, for detects there is no flagging at all (not even "J") regardless of how low the recovery is. Why? A low MS recovery may effect the reliability of data for both detects and non-detects. **USACE Response:** Flagging in Table 9-7 added to be a "J" if MS recoveries are <75%. **USEPA Response: Concur.**

Additional Comments on Final QAPP Dated June 2002.

General Comment: Section 9 Data Validation Tables.

A. Please note for many of the tables (9-1 through 9-7), that the qualifier "J" is used to qualify estimated, non-detect data. This does not agree with qualifier definitions or convention, as the proper qualifier should be "UJ". Please correct all tables as appropriate.

B. It was noted that in the QAPP that there are listed specific sample Holding Times, for all analyte types, both soil and water. ARDL also has an SOP listing these as "maximum holding times", in some cases. In the Data Qualifier tables, it appears that samples will be allowed to exceed holding times as much as 2X the maximum hold time, even for VOCs. Please explain.